Notice of Allowability	Application No.	Applicant(s)
	10/719,088	SRIVASTAVA ET AL.
	Examiner	Art Unit
	Quang N Nguyen	2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the Amendment filed on 01/19/2006.*

2. ☒ The allowed claim(s) is/are *1-10,14,16,17 and 20-26.*

3. ☒ The drawings filed on *21 November 2003* are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☐ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER

Examiner's Amendment

1.   An Examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to applicant, an amendment maybe filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be

submitted no later than the payment of the issue fee.

2.   Authorization for this Examiner's Amendment was given in a telephone interview

with the Applicant's Representative, Mr. Justas Geringson (Reg. No. 57,033), on March

27th, 2006.

3.   Pursuant to MPEP 606.01, the title has been changed to read:

        -- COMPUTER PROGRAM PRODUCT FOR PERFORMING RESOURCE POOL

        MAINTENANCE BY MAINTAINING RESOURCES IN SEVERAL DEQUES --

4.   Please amend claims 1, 5, 7-10, 14 and 20 as below:

        1. (Currently amended) A computer program product, embedded in a computer

readable storage medium, for execution by a server computer for performing resource

pool size maintenance for an application server, comprising:

        computer code for maintaining a pool of resources for the application server;

computer code for maintaining a first plurality of resources that have been determined to be at least one of not created successfully and not able to be refreshed, in an unavailable deque of the resource pool;

computer code for maintaining of a second plurality of resources that have been determined to be available, in an available deque of the resource pool;

computer code for triggering a resource pool shrink check;

computer code for determining that pool shrinking is necessary;

computer code for reducing resources in the unavailable deque of the resource pool; and

computer code for subsequently reducing resources in the available deque of the resource pool.

5. (Currently amended) The computer program product of claim 1 wherein said computer code for determining that pool shrinking is necessary includes:

computer code for determining that the number of resources in the resource pool is greater than a maximum resource pool threshold value.

7. (Currently amended) The computer program product of claim 1 wherein said computer code for reducing resources in [an] the unavailable deque includes:

computer code for reducing resources in [an] the unavailable deque to coincide with a maximum unavailable resources threshold value.

8. (Currently amended) The computer program product of claim 1 wherein the said computer code for reducing resources in the unavailable deque includes computer code for destroying the resources.

9. (Currently amended) The computer program product of claim 1 wherein said computer code for reducing resources in [an] the available deque includes:

computer code for reducing resources in [an] the available deque to coincide with a maximum resource pool threshold value.

10. (Currently amended) The computer program product of claim 1 wherein the said computer code for reducing resources in the available deque includes computer code for destroying the resources.

14. (Currently amended) A computer program product, embedded in a computer readable storage medium, for execution by a server computer for performing maintenance on connection pool deques in an application server, comprising:

computer code for maintaining an unavailable deque of resources that have been determined to be at least one of not created successfully and not able to be refreshed;

computer code for maintaining a reserved deque of resources that have been requested or are in use;

computer code for traversing the unavailable deque and the reserved deque;

computer code for performing maintenance on the unavailable deque; and then

computer code for performing maintenance on the reserved deque;

wherein said computer code for traversing the unavailable and the reserved deques includes computer code for determining what resources are stored in the unavailable deque and the reserved deque.

20. (Currently amended) A computer program product, embedded in a computer readable storage medium, executable by a server computer for performing resource pool maintenance, comprising:

computer code for maintaining a pool of resources;

computer code for maintaining an unavailable deque of resources that have been determined to be at least one of not created successfully and not able to be refreshed;

computer code for maintaining an available deque of resources that have been determined to be available;

computer code for determining that pool shrinking is necessary;

computer code for removing unavailable resources that have been determined to be at least one of not created successfully and not able to be refreshed from [an] the unavailable deque of [a] the resource pool; and then

computer code for removing available resources from [an] the available deque of the resource pool.

5.   Please cancel claims 11-13, 15 and 18-19.

6.   Claims 1-10, 14, 16-17 and 20-26 are allowable.

7.   The following is an examiner's statement of reasons for allowance:

In interpreting the claims, in light of the specification and the applicant's arguments filed on 01/19/2006, the Examiner finds the claimed invention to be patentably distinct from the prior art of record.

Nageswaran (US 5,991,792), teaches a method and apparatus for dynamically managing a thread pool of reusable threads in a computer system, wherein a thread manager maintains a count value of a number of the reusable threads in the thread pool and a thread use ratio value which is compared with a predefined threshold value. Responsive to the thread use ratio value greater than the predefined threshold value, the number of the reusable threads in the thread pool are reduced **(Nageswaran, Abstract, C3: L8-14 and L29-38)**.

Sharma et al. (US 6,182,109), teach a method and system for dynamically managing a pool of execution units *(a pool of threads)* in a server system, wherein the server management thread is wakened either by a timer *(i.e., scheduling resource creation by a scheduler)* or by signals for thread allocation *(requests for thread creation)* when the number of unused threads in the thread pool falls below some lower limit **(Sharma, C25: L27-31)**.

June et al. (US 2004/0045008), teach a connector architecture implementation pre-configures and manages the growth and reduction of a connection pool, wherein the connector determines if the managed connection usage decrease has existed for a specified period of time *(i.e., a period of time has expired)*, which maybe configured as a parameter in the shrink-period minutes element located in an XML formatted descriptor file of the connector architecture implementation, then the size of the connection pool is decreased in step 540 **(June, paragraph [0032])**.

However, the prior art of record fails to teach or suggest individually or in combination that a computer program product, embedded in a computer readable storage medium, executable by a server computer for performing resource pool maintenance, comprising computer code for: maintaining a pool of resources; *maintaining an unavailable deque of resources that have been determined to be at least one of not created successfully and not able to be refreshed; maintaining an available deque of resources that have been determined to be available;* determining that pool shrinking is necessary; *removing unavailable resources that have been determined to be at least one of not created successfully and not able to be refreshed from the unavailable deque of the resource pool;* and then *removing available resources from the available deque of the resource pool* as set forth in independent claims 1, 14 and 20. Claims 1-10, 14, 16-17 and 20-26 are allowed because of the combination of other limitations and the limitation listed above.

The examiner finds the Applicant's arguments on pages 10-12 of the Remarks filed on 01/19/2006 to be persuasive. The applicant argued in substance that the

combination of prior art of records fail to disclose the features of the invention including computer code for *maintaining an unavailable deque of resources that have been determined to be at least one of not created successfully and not able to be refreshed; maintaining an available deque of resources that have been determined to be available; removing unavailable resources that have been determined to be at least one of not created successfully and not able to be refreshed from the unavailable deque of the resource pool; and then removing available resources from the available deque of the resource pool,* as claimed in the invention to maintain resources in several deques so as to improve overall performance and maintenance of the resources pool to achieve various improvements for the application server (see Remarks, pages 10-12 and see Specification, Summary of the Invention).

8.   Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Examiner's Amendment."

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang N. Nguyen whose telephone number is (571) 272-3886.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's SPE, Rupal Dharia, can be reached at (571) 272-3880. The fax phone number for the organization is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RUPAL DHARIA
 PATENT EXAMINER